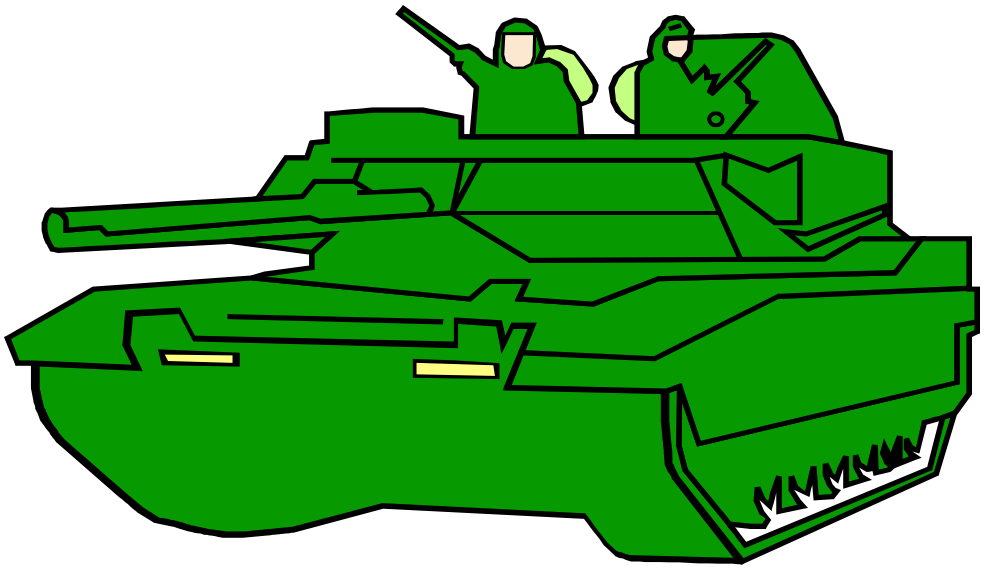
BATTLEFIELD GEOMETRY

Operations Chief Course



DB3

OBJECTIVES

- **Discuss the impact of specific friendly geometry's on AFATDS processing.**
- **Enter new friendly geometry information into AFATDS from the keyboard.**
- **Activate specific on-call geometry information.**
- **Delete specific geometry information from a AFATDS database.**
- **Transmit geometry.**

Geometry Categories

- Movement
- NBC
- Fire Support Coordination Measures and Target Areas
- Sensor Zones
- Battle Areas
- Boundaries
- Situation

Geometry Types

- Geometry Categories are further broken down into Geometry Types.
- There are 118 Geometry Types
- These Geometry Types are selected when building a New Geometry.

Geometry Type Discriminator's

- **FORCE:**
  - **FRIENDLY**
  - **ENEMY**
- **NAME**
- **SHAPE:**
  - **AREA**

  a) Circular

  b) Rectangular

  c) Irregular
  - **LINE**
  - **POINT**
- **TYPE**

Friendly Geometry Colors:

- Colors are Force and Type dependant.
  - **Blue**
  - **Red**
  - **Black with Yellow Fill**
  - **Green**
  - **Yellow**
  - **Black**
  - **Blue and Red**

Enemy Geometry Colors:

- Colors are Force and Type dependant.
  - **Red**
  - **Red and Blue**
  - **Green**

All AFATDS Geometries are :

FUNCTIONAL

or

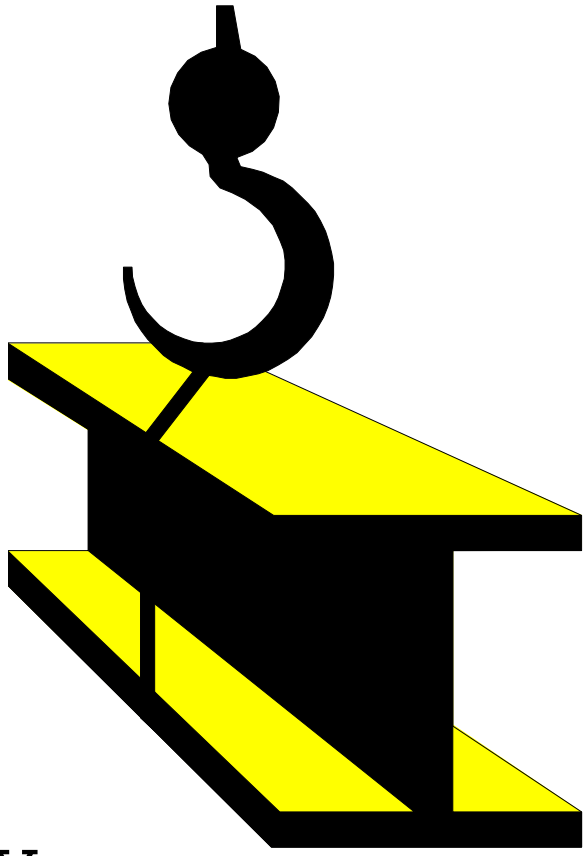
- Affects AFATDS software tactical processing.
- Geometry is used by AFATDS software in determining recommendations on coordination or tactical decisions.
- EXAMPLE: NO FIRE AREA

NON-FUNCTIONAL

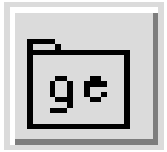
- No affect on AFATDS software tactical processing.
- Geometry is visible on situational overlay, however, AFATDS software ignores significance of geometry.
- EXAMPLE: OBJECTIVE

Build The Geometry Overlay

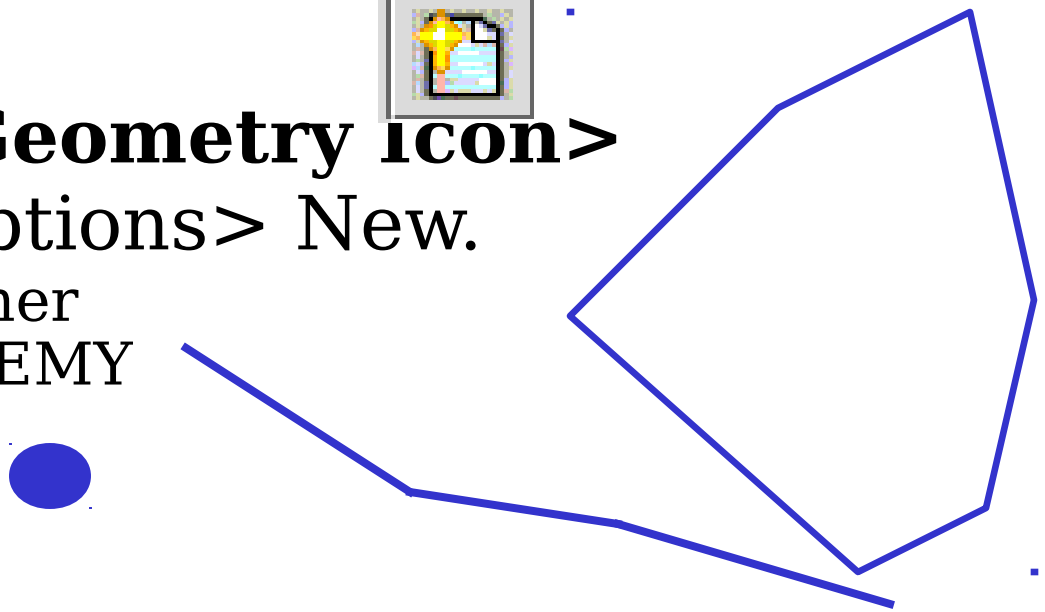
- Click **Map> Overlays> In use> <New>**
- Name the Overlay: **GEOMETRIES**
- Click **GEOMETRIES**
  CATEGORIES: **ALL**
  FORCES **ALL**
- Check **SITUATION IN VIEW**.
- **<OK>, <APPLY>, <APPLY to MAP SETUP>** and **<OK>**



Creating New Geometries

- Click <**GEOMETRY Workspace Icon**> 

- Click **<New Geometry Icon>**
  or select Options> New.
- Force Shape is either FRIENDLY OR ENEMY
  - AREAS
  - LINES
  - POINTS



- Defaults to **<FRIENDLY AREA>**

Naming New Geometries

- Assigns a “file” name
- To avoid confusion, units should have a naming SOP. (Ref: MCRP 3-16.2A, APP. A (TPM))
- “Legacy” devices are limited in number and type of geometries stored and names.
- Names can be from 1-10 letters or numbers.

- Enter **ZO12MR**
- Select **Zone Of Responsibility**

Area Geometries

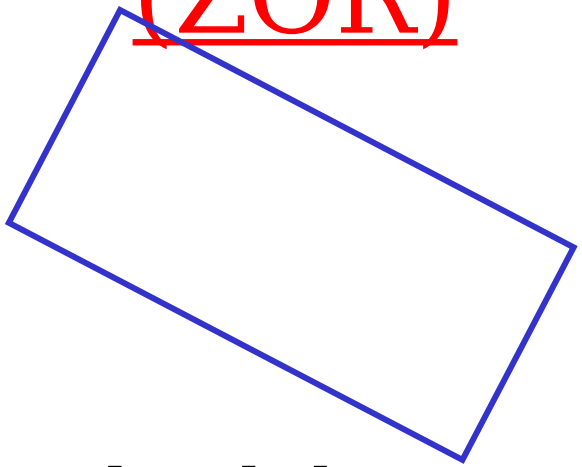
- Irregular Areas
- Circular Areas
- Rectangular Areas

Irregular Areas

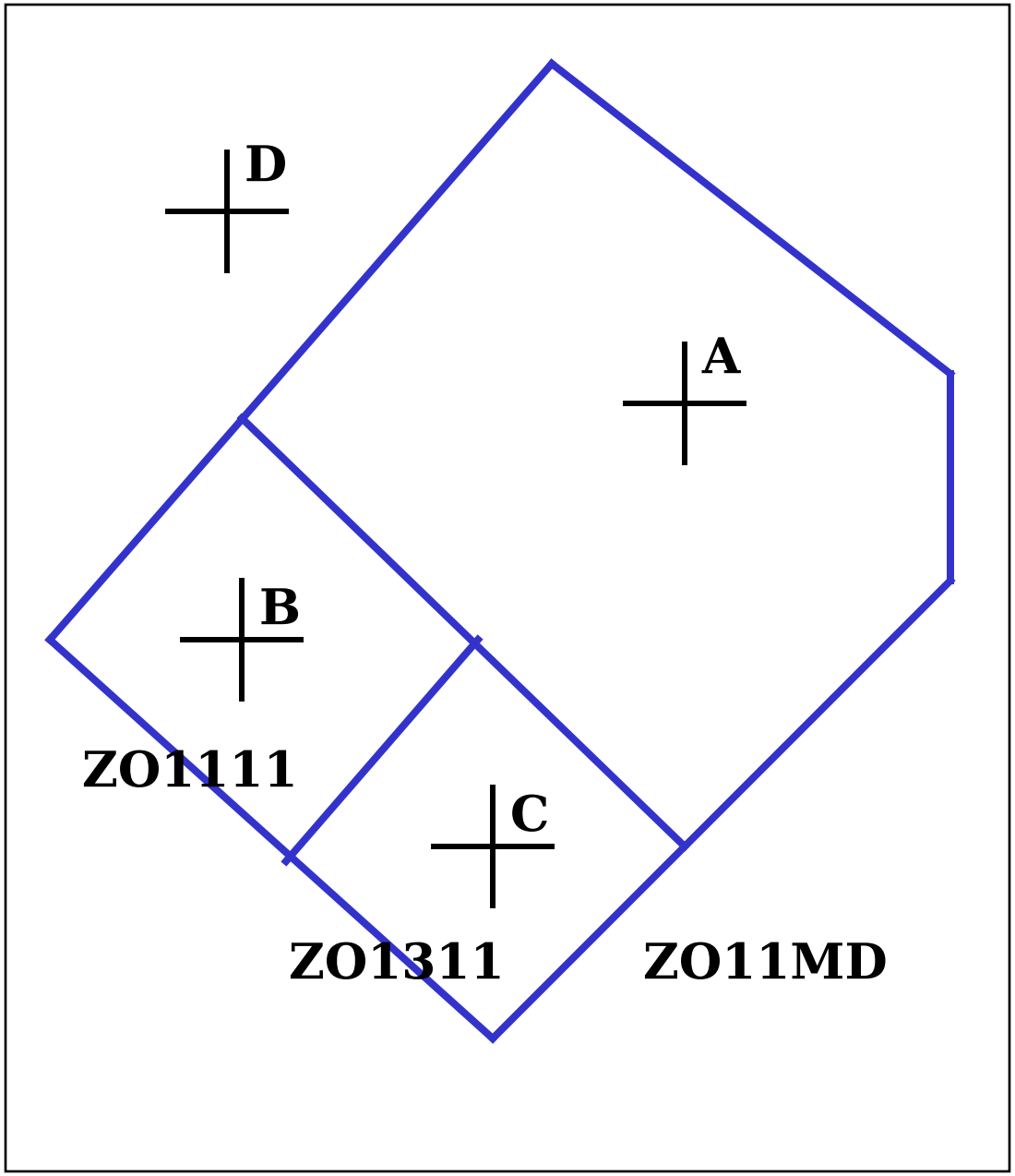
- 3 to 300 locations specified.

- Select **IRREGULAR**

ZONE OF RESPONSIILITY (ZOR)



A ZOR is a tactical subdivision of a larger area, the responsibility for which is assigned to a tactical unit. That unit is responsible for coordinating all fires within it’s zone. If a target or the effects of fire on that target plot within a ZOR, AFATDS will attempt to perform coordination with the responsible unit prior to engaging the target.



ASSUME YOU ARE 1/11

Case A:
Coordination recommendation with 1 MD.

Case B:
No Coordination recommended.

Case C:
Coordination recommendation with 3/11.

Case D:
No Coordination recommended.

Coordination is not required if:

- The entire effects area of the target is beyond a Coordinated Firing Line (CFL) within the same ZOR as the establishing unit, for surface-to-surface FS systems such as mortars,artillery and NSFS.

- Or, the entire effects area of the target is within a Free Fire Area.

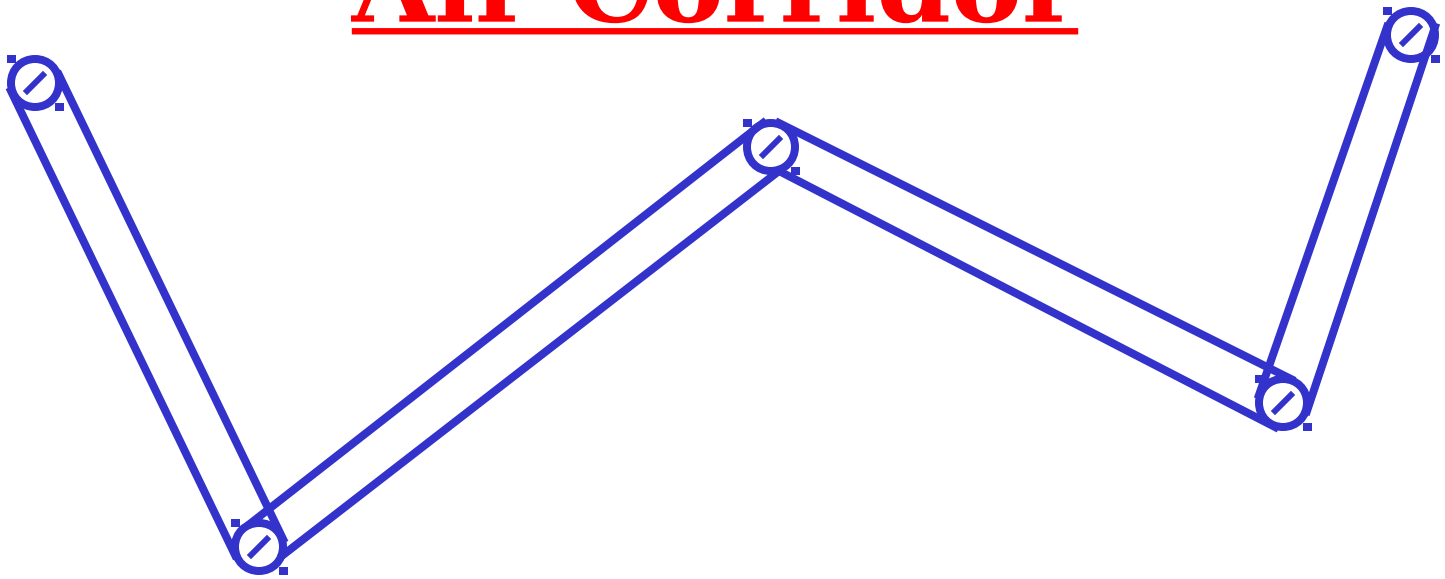
ZO12MR

- Establishing Unit: **FSCC 2nd MAR**
- Responsible Unit: **FSCC 2nd MAR**
- Absolute: **Let time default**
- Select **<Coordinates>** and enter Grids:

  665 050 **<Apply>**
  769 050 **<Apply>**
  743 180 **<Apply>**
  704 180 **<Apply>**
  590 286 **<Apply>**
  525 282 **<Close Area>**

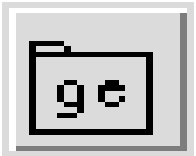
  <OK> all open windows

Air Corridor



An Air Corridor is a restricted air route of travel
for use by friendly aircraft and established to pr
friendly aircraft from being fired on by friendly f
Air Corridors are automatically built at AFATDS
air route is received in the ACO.

Create an Air Corridor



- Click <**GEOMETRY Workspace Icon**>

- Click **<New Geometry Icon>** or select Options, New.

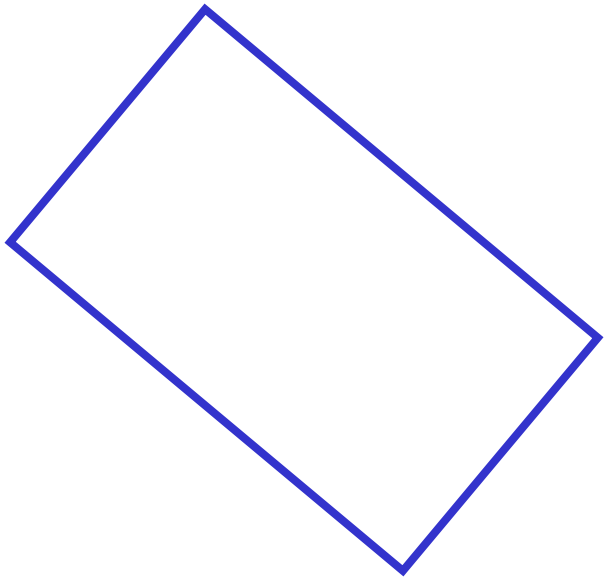
- Select FORCE/SHAPE: **FRIENDLY AREA**
- Name: **AC12MR**
- Type: **AIR CORRIDOR**

- Click 1 on **<OK>**

AC12MR

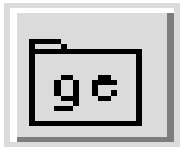
- Establishing Unit: **FSCC 2nd MAR**
- **On-call**
- Grid Coordinates: Select **<Coordinates>** and enter:
  - **610 060**
  - **568 127**
  - **536 216**
  - **573 246**
- Segment, Times, Width, Min & Max Alt
  - **1 +12 to +16 500M 8000ft MSL to 10000ft MSL**
  - **2 +15 to +18 500M 7000ft MSL to 9000ft MSL**
  - **3 +17 to +22 500M 6000ft MSL to 8000ft MSL**

Dead Space Area (DSA)



A DSA is an area that a specific firing unit canno
because of physical limitations of the weapon sys
intervening terrain, or projectile trajectory. A DS
commonly used to depict areas in which low ang
weapons (e.g. naval gunfire) cannot engage targ

Create a Dead Space Area

- Click <**GEOMETRY Workspace Icon**> 

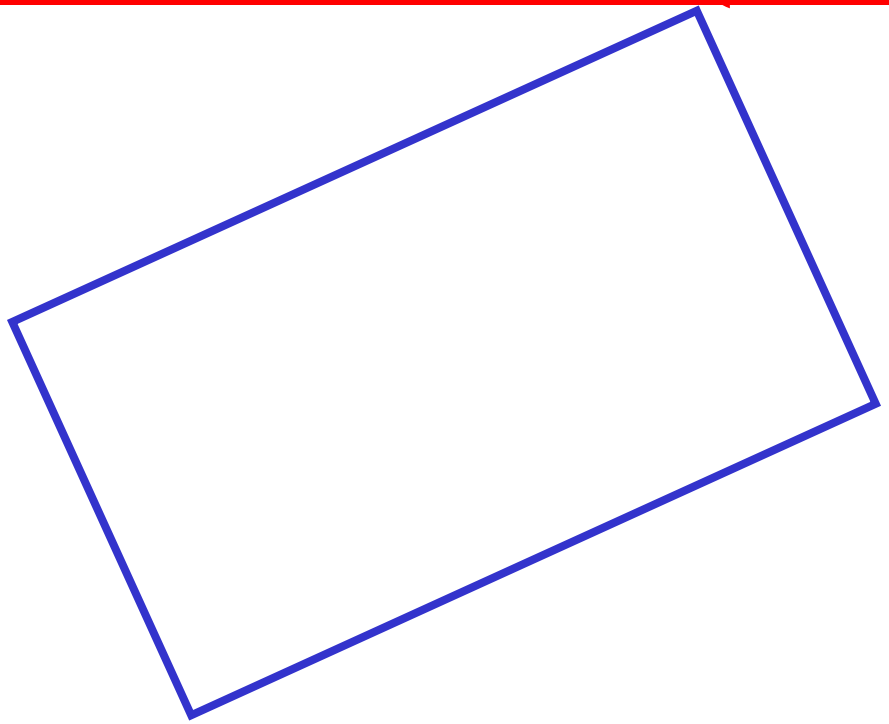
- Click **<New Geometry Icon>** or select Options, New.

- Select Force/Shape: **FRIENDLY AREA**
- Name: **DS1D51**
- Select Type: **Dead Space Area**

DS1D51

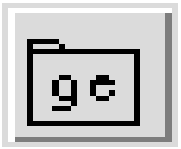
- Establishing Unit: **DDG 51**
- Absolute Time: **Let time default**
- Select: **IRREGULAR AREA**
- Units Restricted From Firing: **<Add>**
  Arleigh Burke DDG 51 USN
- Grid Coordinates: Select **<Coordinates>** and enter:
  - **750 045**
  - **760 055**
  - **750 062**
  - **742 052**

Free Fire Area (FFA)



A FFA is a specific designated area into which ar
system may fire without additional coordination
establishing headquarters.

Create a Free Fire Area

- Click <**GEOMETRY Workspace Icon**> 
- Click **<New Geometry Icon>**
  or select Options, New.

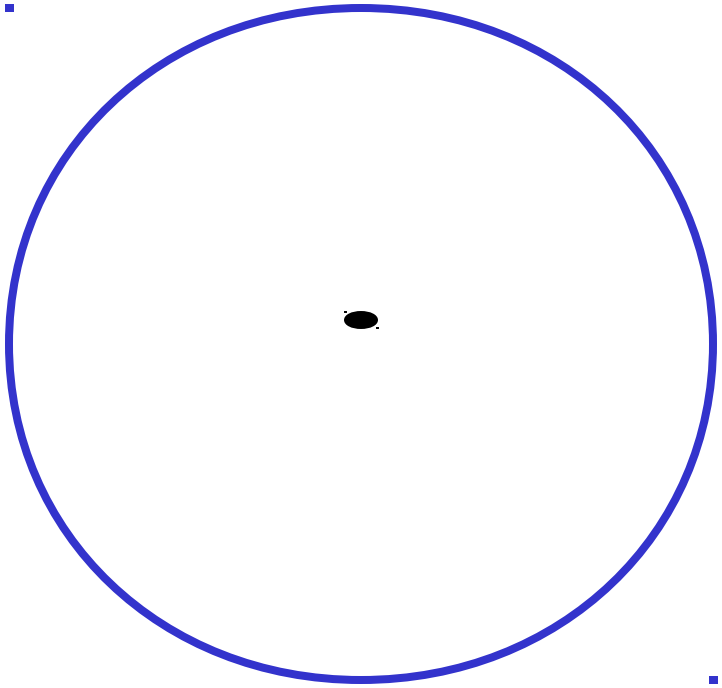
- Force/Shape: **FRIENDLY AREA**
- Name: **FF12MR**
- Select Type: **FREE FIRE AREA**

FF12MR

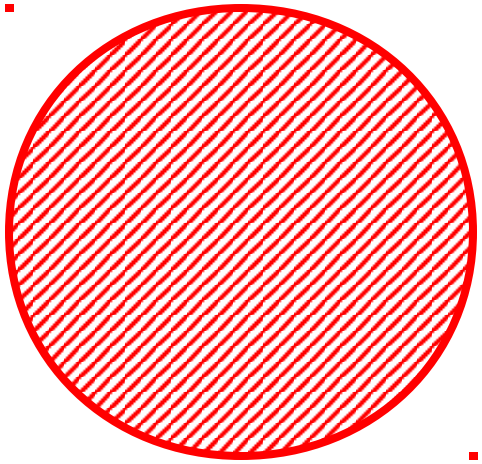
- Select: **IRREGULAR AREA**
- Establishing Unit: **FSCC 2nd MAR**
- Absolute Time: **Let time default**
- Grid Coordinates: Select **<Coordinates>** and enter:
  - **570 240**
  - **590 240**
  - **590 260**
  - **570 260**

Circular Areas

- 1 location and a specified radius

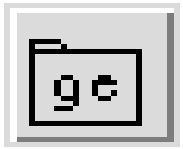


Restricted Fire Area (RFA)



An RFA is an area in which certain restrictions o
or effects of fires are not allowed. Two exceptio
(1) when establishing headquarters approves fi
temporarily within the RFA on a mission basis, a
when the enemy force within the RFA engages a
force, the commander may engage the enemy to
defend his force.

Create a Restrictive Fire Area

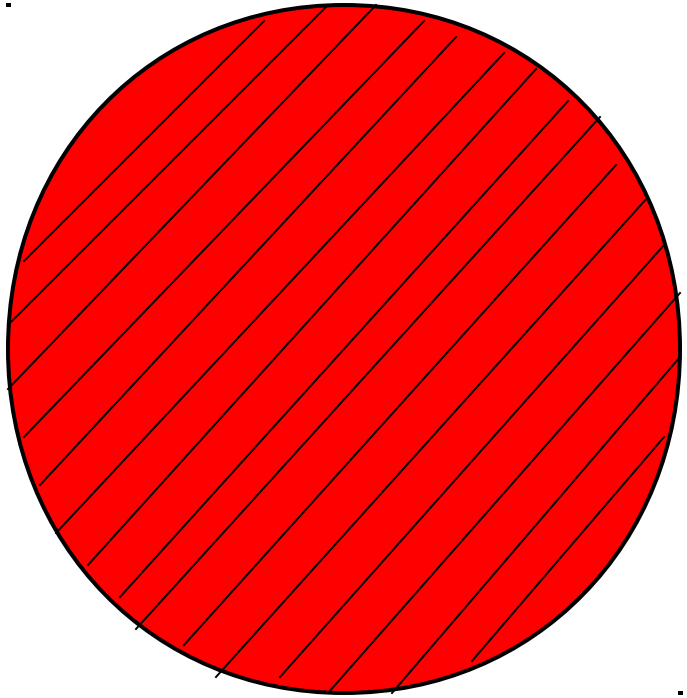
- Click <**GEOMETRY Workspace Icon**> 
- Click **<New Geometry Icon>**
  or select Options, New.

- Force/Shape: **FRIENDLY AREA**
- Name: **RF12MR**
- Select Type: **RESTRICTIVE FIRE AREA**

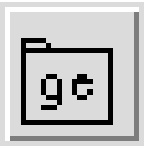
RF12MR

- Establishing Unit: **FSCC 2nd MAR**
- Absolute Time: **Let time default**
- Grid Coordinates: **617 185**
- Radius: **1200M**
- Restriction: **No DPICM**

No Fire Areas – No fires or effects of fires are allowed.



Create a No Fire Area

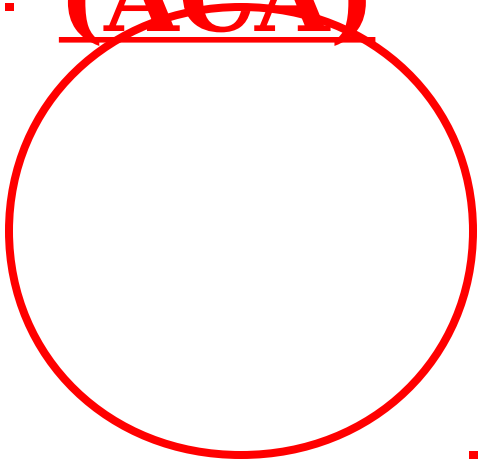
- Click <**GEOMETRY Workspace Icon**> 
- Click **<New Geometry Icon>**
  or select Options, New.

- Force/Shape: **FRIENDLY AREA**
- Name: **NF12MR**
- Select Type: **NO FIRE AREA**

NF12MR

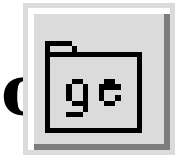
- Establishing Unit: **FSCC 2nd MAR**
- Shape: **CIRCLE**
- Absolute Time: **Let time default**
- Grid Coordinate:
  - **646 220**
  - Radius: **500M**

Airspace Coordination Area (ACA)



An ACA is a block of airspace in the target area
friendly aircraft are reasonably safe from friend
fires. It may occasionally be a formal measure (
dimensional box in the sky). More often, it is inf
The purpose of the ACA is to allow the simultane
attack of targets near each other by multiple fire
means, one of which is normally air.

Create An Airspace Coordination Area

- Click **<GEOMETRY Workspace Ico** 
- Click **<New Geometry Ico**
  or select Options, New.

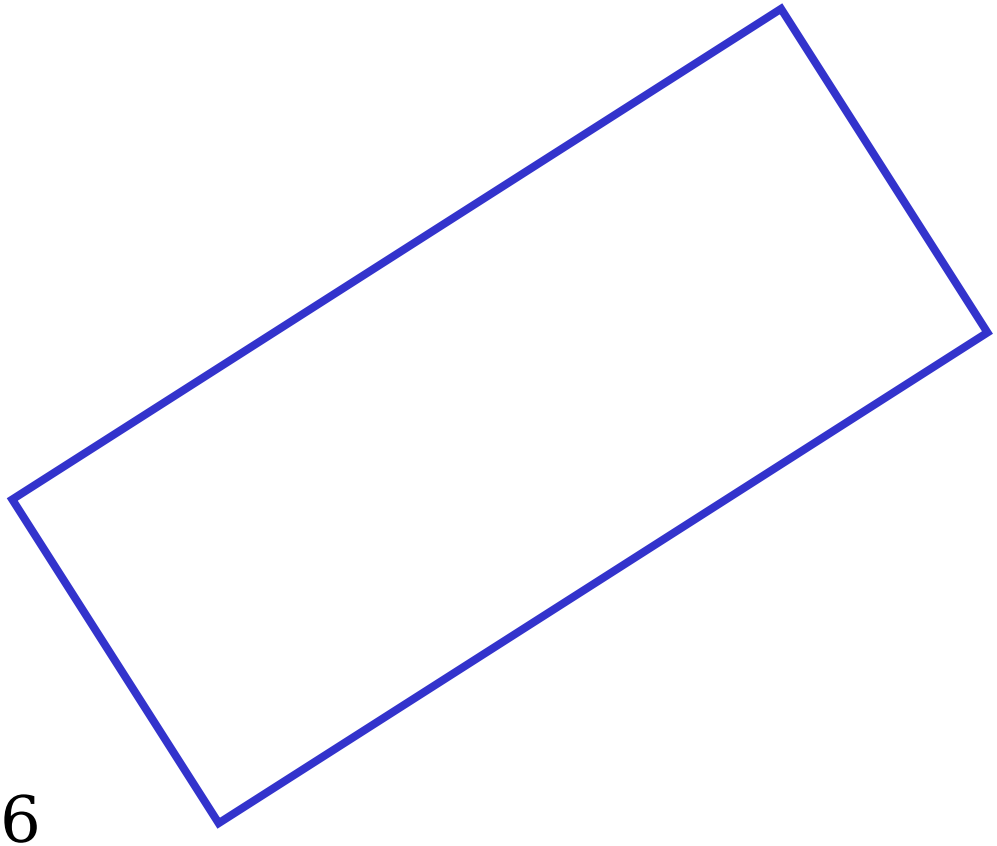
- Force/Shape: **FRIENDLY AREA**
- Name: **AS12MR**
- Select Type: **AIRSPACE COORDINATION AREA**

AS12MR

- Establishing Unit: **FSCC 2nd MAR**
- **ON-CALL**: **+0 to +20**
- Altitudes: **0 to 8000 ft.**
- Grid Coordinate: **605 165**
- Radius: 15**00M**

Rectangular Areas

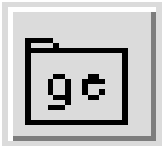
- 2 Locations and a specified width



Target Buildup Area (TBA)

A TBA is an area into which fires may not be di
against specific target types until the quantity
targets reach an operator specified threshold.

Create a Target Buildup Area

- Click <**GEOMETRY Workspace Icon**> 
- Click **<New Geometry Icon>** or select Options, New.

- Force/Shape: **FRIENDLY AREA**
- Name: **TB12MR**
- Select Type: **TARGET BUILDUP AREA**

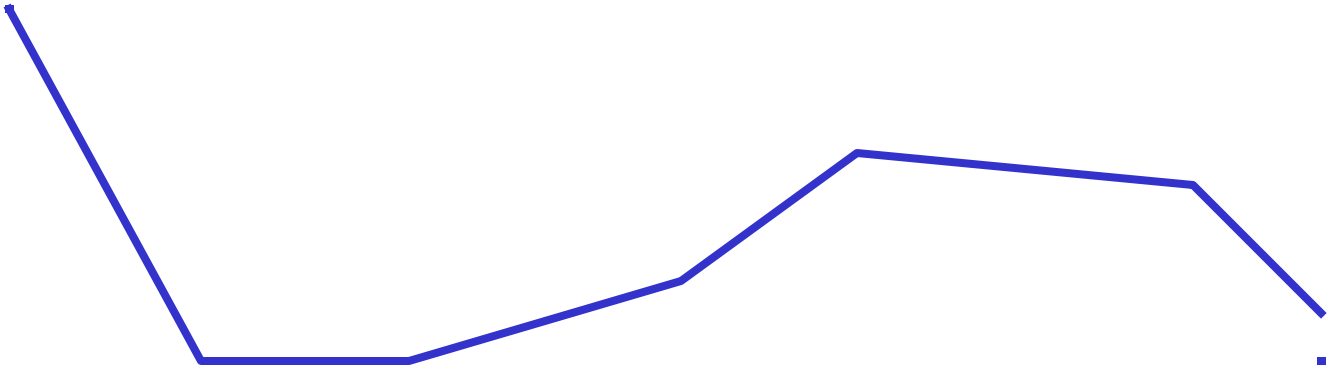
TB12MR

- Establishing Unit: **FSCC 2nd MAR**
- Select: **RECTANGLE**
- Absolute Time: **Let time default**
- Target Information: **<Add>**
  - **Maneuver, APC**
  - **Threshold: 4 Reports**

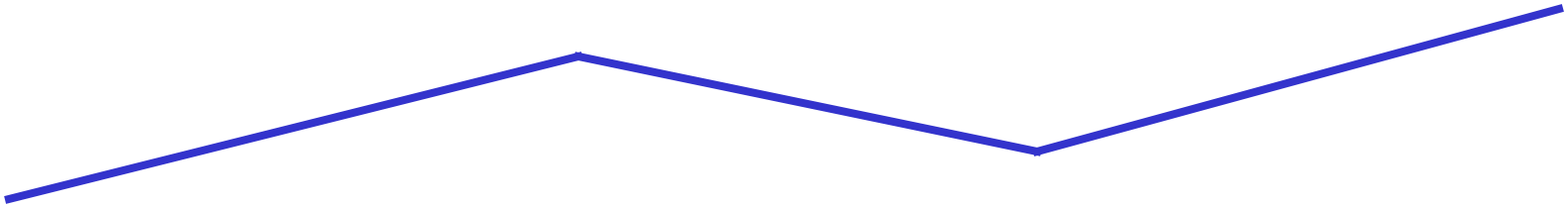
- Grid Coordinates :
  - **660 200**
  - **665 190**
- Width: **1000M**

Line Geometries

- 2 to 300 locations specified
- Must be input from left to right when facing the enemy.

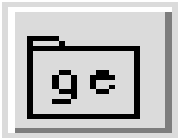


Fire Support Coordination Line (FSCL)



Supporting elements may attack targets forward of the FSCL, without prior coordination with the ground force commander, provided the attack will not produce adverse effects on, or to the rear of, the line. Attacks against surface targets behind this line must be coordinated with the appropriate ground force commander.

Create a Fire Support Coordination Line

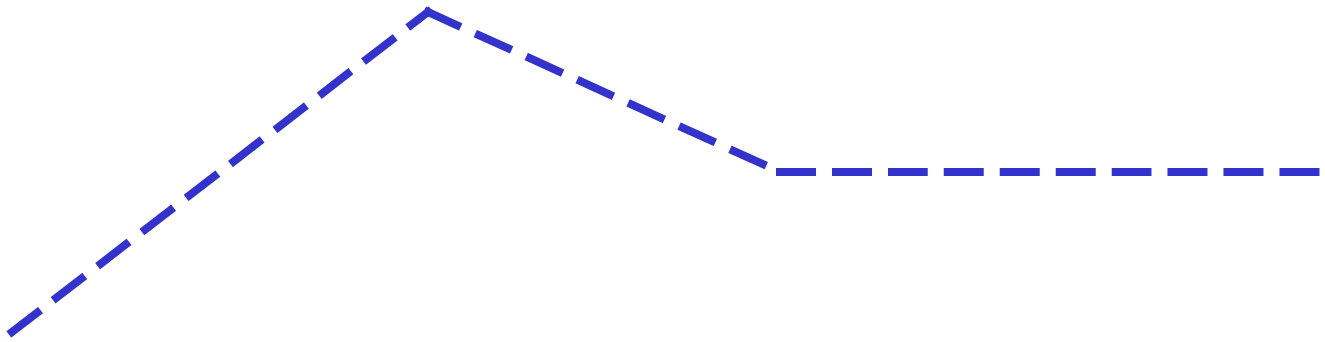
- Click <**GEOMETRY Workspace Icon**> 
- Click **<New Geometry Icon>** or select Options, New.

- Force/Shape: **FRIENDLY LINE**
- Name: **FS12MR**
- Select Type: **FIRE SUPPORT COORDINATION LINE**

FS12MR

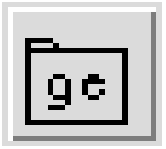
- Establishing Unit: **FSCC 2nd MAR**
- Absolute Time: **Let time default**
- Grid Coordinates :
  - **500 240**
  - **700 240**

Coordinated Firing Line (CFL)



A CFL is a line beyond which conventional surface fire
support means (mortars, field artillery and NSFS ships)
may fire any time within the zone of the establishing
headquarters without additional

Create a Coordinated Fire Line

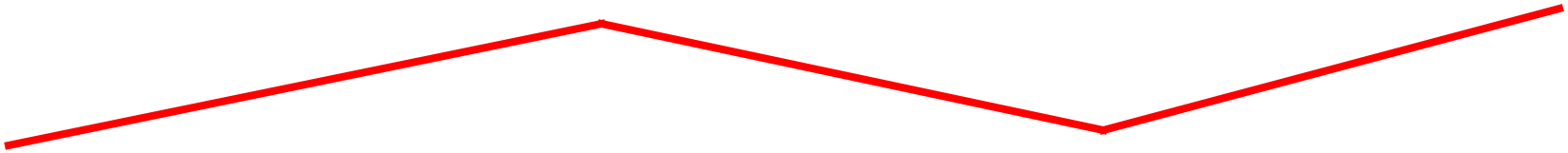
- Click <**GEOMETRY Workspace Icon**> 
- Click **<New Geometry Icon>**
  or select Options, New.

- Force/Shape: **FRIENDLY LINE**
- Name: **CF12MR**
- Select Type: **COORDINATED FIRE LINE**

CF12MR

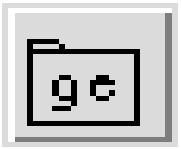
- Establishing Unit: **FSCC 2nd MAR**
- Absolute Time: **Let time default**
- Grid Coordinates and Altitudes:
  - **638 099**
  - **703 186**

Restricted Fire Line (RFL)



A RFL is a line established between two converg
friendly forces over which all fires crossing this
be coordinated with the establishing headquarte
higher headquarters of the two converging force
coordinating agency.

Create a Restricted Fire Line

- Click <**GEOMETRY Workspace Icon**> 

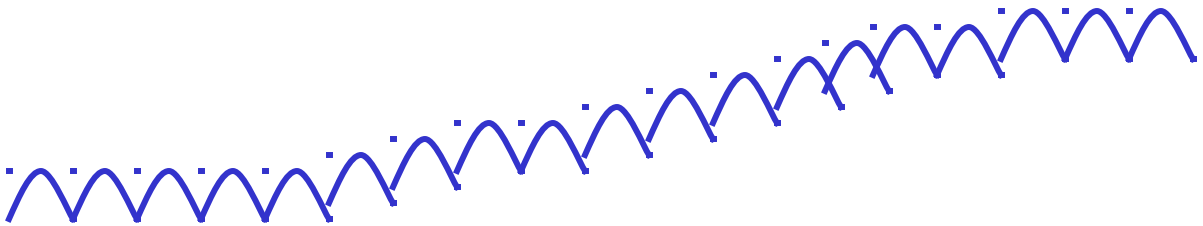
- Click **<New Geometry Icon>**
or select Options, New.

- Force/Shape: **FRIENDLY LINE**
- Name: **RL12MR**
- Select Type: **RESTRICTED FIRE LINE**

RL12MR

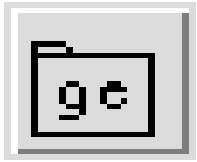
- Establishing Unit: **FSCC 2nd MAR**
- **On-Call**: **+0 to +120**
- Grid Coordinates and Altitudes
  - **585 181**
  - **660 220**

Forward Line of Own Troops(FL)



A FLOT is an arched line identifying the most
forward advance of friendly troops. The arch should point toward the enemy

Create a FLOT

- Click <**GEOMETRY Workspace Icon**> 

- Click **<New Geometry Icon>** or select Options, New.

- Force/Shape: **FRIENDLY LINE**
- Name: **FL12MR**
- Select Type: **FORWARD LINE OF OWN TROOPS**

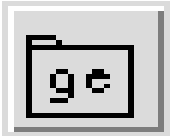
FL12MR

- Establishing Unit: **FSCC 2nd MAR**
- Absolute Time: **Let time default**
- Grid Coordinates
  - **660 060**
  - **743 180**

Point Geometries

- 1 location specified

Create a Fire Support Station

- Click <**GEOMETRY Workspace Icon**> 
- Click **<New Geometry Icon>** or select Options, New.

- Force/Shape: **FRIENDLY POINT**
- Name: **SS1D51**
- Select Type: **FIRE SUPPORT STATION**

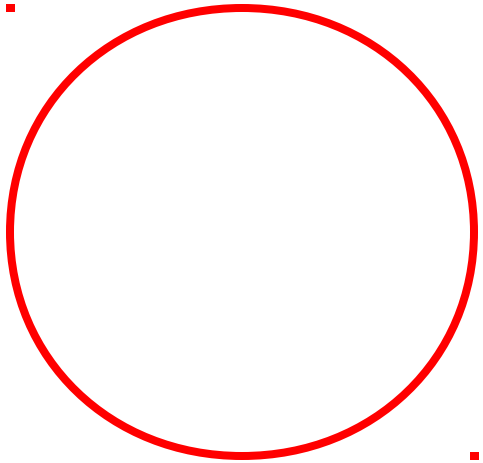
SS1D51

- Establishing Unit: **FSCC 2nd MAR**
- Absolute Time: **Let time default**
- Grid Coordinate: **790 010**

Create a Down Range Mask

- Establishing Unit: **Your FDC**
- Name: Per unit SOP **MA1A10** or **MA1B10**
- Shape: **CIRCLE**
- Absolute Time: **Let time default**
- Max Altitude: **3000**
- Grid Coordinate:
  - **662 156**
  - Radius: **500M**

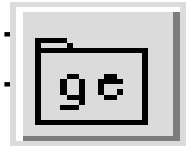
ENEMY GEOMETRY



Create an Enemy Assembly Area

Only 1 Enemy Geometry example will be provided, since the procedures are the same as building Friendly Geometries.

Navigation

- Click <**GEOMETRY Workspace** 

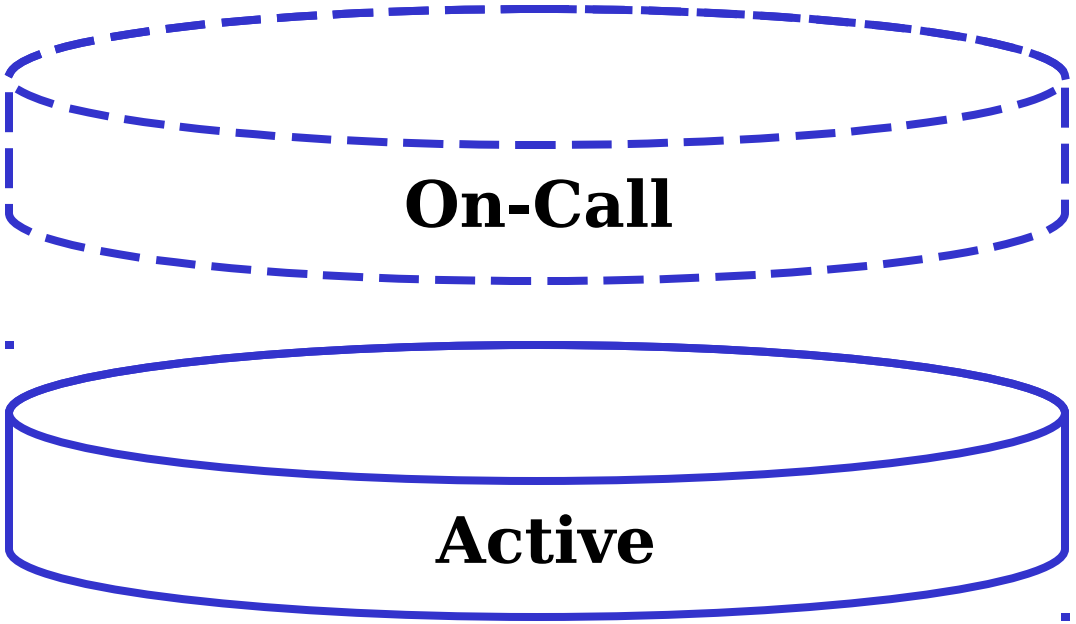
>
- Click **<New Geometry**
>
or select Options, New.

- Force/Shape: **ENEMY AREA**.
- NAME: **AA01EN**
- Click 1 on **ASSEMBLY AREA**.

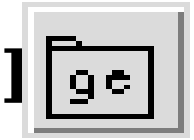
Entries

- Shape: **RECTANGLE**
- Establishing Unit: **FSCC 2nd MAR**
- Absolute Time: **Let time default**
- Grid Coordinates:
  - **570 260**
  - **570 280**
- Width: **1000**
- **<OK>**

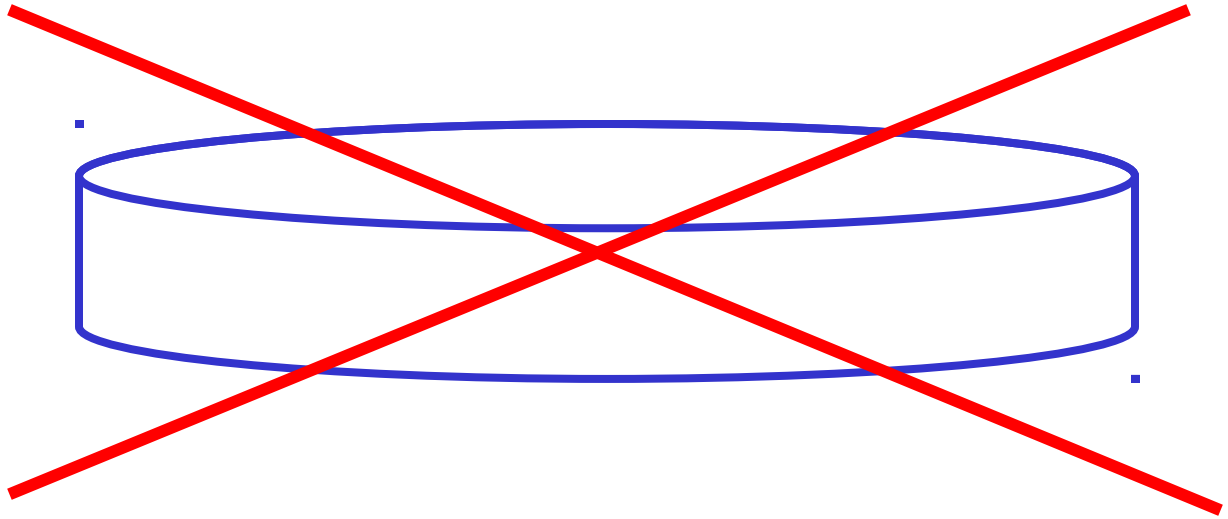
Activating Geometry



Activate RFL RL12MR

- Click **GEOMETRY Workspace I** 
- Double click on **RL12MR Restrictive Fire Line**
- **<ACTIVATE>**
  - Times will change to absolute
  - Effective Time: Current System Time
  - Expiration Time: System time +120 minutes**. <OK>**
  - Status turns to **Active.**

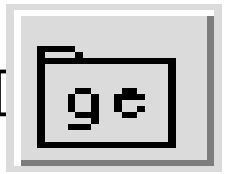
Deleting Geometry



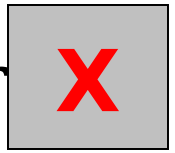
Deleting a Geometry

At B FDC

- Delete ZO12MR
  - Click **<GEOMETRY Workspace I**

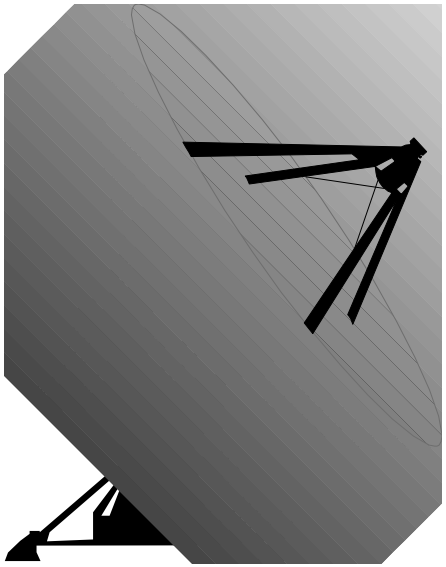


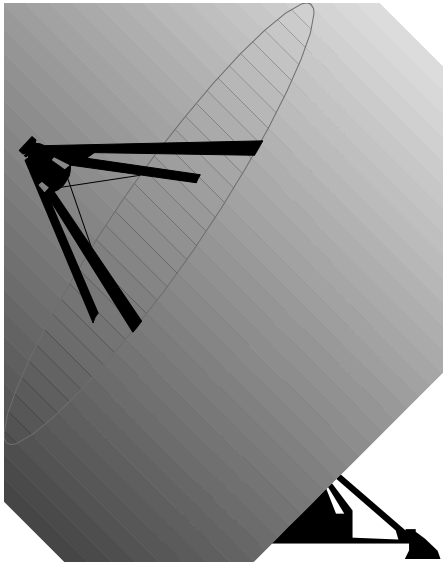
  - Click 1 on **ZO12MR ZONE OF RESPONSIBILITY**
  - Select the **Delete Icon** (3rd icon fr right**)**



Confirm the deletion

Transmitting Geometry





TRANSMIT A GEOMETRY

- At A FDC
- Transmit ZO12MR
  - Click **<GEOMETRY Workspace I**
  - Double click on **ZO12MR ZONE OF RESPONSIBILITY**
  - Click 1 on **SEND**.
  - Select B FDC and **OK**.
- When B FDC has **ZO12MR** A FDC will delete it and B FDC will send it to A FDC.

MOVING A GEOMETRY

- Highlight your TBA, Click 3, Release on Edit.
- Open Coordinates Window.
- With Coordinates Window Highlighted, Grab your TBA, Using Number 2, Move the TBA.
- Observe Coordinates Window, for proper grid, release Number 2 when moved.

QUESTIONS

SUMMARY

- Explain how specific geometry information affects AFATDS processing.
- Enter new geometry information into AFATDS from the keyboard.
- Activate specific on-call geometry information.
- Delete specific geometry information from an AFATDS database.
- Transmit geometry information.